

Comparison of all-cause mortality in England with Europe and the USA: January 2020 to February 2021

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Background:

Assessing mortality during the COVID-19 pandemic is vital for informing public health strategies and policy decision making. All-cause excess mortality provides an objective measure of the impact of the pandemic including both the direct and indirect effects. Our study considers the burden of mortality in the UK, Europe and the USA. We examine variation between countries, by age and sex. We explore the extent to which this variation is associated with COVID-19 case rates and other population characteristics.

Methods:

The study is a secondary analysis of routine administrative population and mortality data. Weekly death occurrences and population estimates were obtained from Eurostat and national statistical agencies. Contextual information on COVID-19 case rates, population-level risk factors and healthcare were obtained from various open-source databases. Weekly age-standardised mortality rates (ASMRs) were calculated and presented relative to a baseline average from the preceding 5-year period. Relative cumulative (rc) ASMRs were then calculated to provide a comparable assessment of excess mortality at a point in time.

Results:

Preliminary results show that, by end of the analysis period, England had an overall rcASMR of 10.09%. Higher excess mortality was identified for some countries (eg USA 14.58%) and lower - even below average mortality - for others (eg Norway -6.8%). Under 65 rcASMR showed substantial variation between countries. Cumulative COVID-19 case rates showed a moderate effect size ($R^2 = 0.51$) when used to explain the proportion of variation observed between rcASMRs. Other population factors showed a smaller effect.

Conclusions:

The burden of mortality experienced between countries and populations over the COVID-19 pandemic period has shown significant variation. Factors which may have contributed to the position of some countries should be further explored in order to inform ongoing management of Covid-19 and future pandemic events.

Key messages:

- Significant variation in all-cause excess mortality has been identified across the COVID-19 pandemic period between nations and particularly in younger age groups.
- COVID-19 case rates are associated with relative cumulative all-cause excess mortality among the nations assessed.